

Appl. No. : 10/788,926
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AMENDMENTS TO THE CLAIMS

Claims 1, 9-17, and 39-56 were pending prior to entry of these amendments. Please amend Claims 1, 9, 12, 17, 39, 40, 50, 52, 53, 55, and 56. Please cancel Claim 54.

1. (Currently amended) A substrate carrier that is capable of receiving a vacuum, and holding a substrate from a backside during processing, such that when a solution is disposed on a front side of the substrate, the solution is prevented from reaching an inner region of a base and a backside inner region of the substrate, the substrate carrier comprising:

the base for placing the substrate thereon;

a vacuum inlet disposed within the inner region of the base, the vacuum inlet connectable to the vacuum to hold the substrate;

a sealing member disposed on the base and defining the inner region of the base, the sealing member adapted to contact the backside of the substrate to thereby establish the backside inner region of the substrate, and assist in preventing the solution from reaching the backside inner region of the substrate and the inner region of the base during the processing of the substrate; **[[and]]**

a sealing mechanism disposed outside of the sealing member, the sealing mechanism includes another sealing member, the another sealing member disposed outside of and around the sealing member and adapted to contact the backside of the substrate and thereby assist in preventing the solution from reaching the backside inner region of the substrate during the processing of the substrate when the another sealing member is in a sealed position; and

a moving mechanism configured to move the another sealing member between the sealed position and an unsealed position.

2.-8. (Canceled)

9. (Currently amended) ~~The substrate carrier according to claim 1~~ A substrate carrier that is capable of receiving a vacuum, and holding a substrate from a backside during processing, such that when a solution is disposed on a front side of the substrate, the solution is

prevented from reaching an inner region of a base and a backside inner region of the substrate, the substrate carrier comprising:

the base for placing the substrate thereon;

a vacuum inlet disposed within the inner region of the base, the vacuum inlet connectable to the vacuum to hold the substrate;

a sealing member disposed on the base and defining the inner region of the base, the sealing member adapted to contact the backside of the substrate to thereby establish the backside inner region of the substrate, and assist in preventing the solution from reaching the backside inner region of the substrate and the inner region of the base during the processing of the substrate; and

a sealing mechanism disposed outside of the sealing member, the sealing mechanism includes another sealing member, the another sealing member disposed outside of and around the sealing member and adapted to contact the backside of the substrate and thereby assist in preventing the solution from reaching the backside inner region of the substrate during the processing of the substrate, wherein the another sealing member is an inflatable sealing member.

10. (Original) The substrate carrier according to claim 9 wherein the inflatable sealing member is inflated during the processing of the substrate, and is not inflated during a subsequent processing of the substrate.

11. (Original) The substrate carrier according to claim 9 wherein the inflatable sealing member is inflated by a gas that is provided through a second plurality of holes that are formed in the base.

12. (Currently amended) The substrate carrier according to claim ~~[[8]]~~ 1 wherein the another sealing member is an o-ring.

13. (Original) The substrate carrier according to claim 12 wherein the sealing member is a hollow o-ring.

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14. (Original) The substrate carrier according to claim 13 wherein both the sealing member and the another sealing member are made from an elastomer material.

15. (Original) The substrate carrier according to claim 14 wherein the another sealing member is a hollow o-ring.

16. (Original) The substrate carrier according to claim 13 wherein the hollow o-ring has a durometer rating of less than 50.

17. (Currently amended) ~~The substrate carrier according to claim 1~~ A substrate carrier that is capable of receiving a vacuum, and holding a substrate from a backside during processing, such that when a solution is disposed on a front side of the substrate, the solution is prevented from reaching an inner region of a base and a backside inner region of the substrate, the substrate carrier comprising:

the base for placing the substrate thereon;

a vacuum inlet disposed within the inner region of the base, the vacuum inlet connectable to the vacuum to hold the substrate;

a sealing member disposed on the base and defining the inner region of the base, the sealing member adapted to contact the backside of the substrate to thereby establish the backside inner region of the substrate, and assist in preventing the solution from reaching the backside inner region of the substrate and the inner region of the base during the processing of the substrate; and

a sealing mechanism disposed outside of the sealing member, the sealing mechanism includes another sealing member, the another sealing member disposed outside of and around the sealing member and adapted to contact the backside of the substrate and thereby assist in preventing the solution from reaching the backside inner region of the substrate during the processing of the substrate, wherein the another sealing member is an o-ring [[is]] disposed in a substantially perpendicular movable annular housing that is adapted to position the another sealing member [[o-ring]] in a sealed seal position and an unsealed position.

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18.-38. (Canceled)

39. (Currently amended) A substrate carrier for holding a backside of a wafer from processing using a solution, comprising:

a base configured to receive the backside of the wafer;

a permanent seal coupled to a first circumference of the base and configured to seal a first circumferential area from the solution;

a ~~removable~~ movable seal coupled to a second circumference of the base and configured to receive vacuum for holding the backside of the wafer against the base to seal the backside of the wafer during the processing, wherein the movable seal is configured to be movable between a sealed position and an unsealed position while the wafer is mounted on the base.

40. (Currently amended) ~~The substrate carrier of claim 39 further comprising~~
A substrate carrier for holding a backside of a wafer from processing using a solution, comprising:

a base configured to receive the backside of the wafer;

a permanent seal coupled to a first circumference of the base and configured to seal a first circumferential area from the solution;

a removable seal coupled to a second circumference of the base and configured to receive vacuum for holding the backside of the wafer against the base to seal the backside of the wafer during the processing; and

a seal inlet coupled to the removable seal and configured to ~~[[a]]~~ receive fluid to selectively apply the removable seal.

41. (Previously presented) The substrate carrier of claim 40, wherein the removable seal includes an inflatable membrane.

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42. (Previously presented)The substrate carrier of claim 41, wherein the seal inlet receives the fluid to selectively inflate the inflatable membrane to seal the backside of the wafer.

43. (Previously presented)The substrate carrier of claim 42, wherein the fluid is air supply.

44. (Previously presented)The substrate carrier of claim 39 further comprising a support pad coupled to the base configured to brace the backside of the wafer wherein the vacuum inlet extends through the support pad.

45. (Previously presented)The substrate carrier of claim 39 further comprising a gimbal mechanism.

46. (Previously presented)The substrate carrier of claim 39, wherein the base includes a carrier ring configured to define a recess to receive the wafer.

47. (Previously presented)The substrate carrier of claim 39 further comprising a carrier shaft movably coupled to a motor configured to rotate the substrate carrier.

48. (Previously presented)The substrate carrier of claim 47, wherein the motor is configured to translate the substrate carrier along a vertical axis or a lateral axis.

49. (Previously presented)The substrate carrier of claim 39, wherein the permanent seal comprises an o-ring.

50. (Currently amended) The substrate carrier of claim 39, wherein the ~~removable~~ movable seal includes an annular housing having a groove configured to receive an o-ring, the annular housing movably coupled to the base.

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51. (Previously presented) The substrate carrier of claim 50, wherein the annular housing is configured to slide along a certain vertical circumference of the base for selectively sealing the second circumferential area.

52. (Currently amended) A system for processing a substrate having a frontside and a backside, the system comprising:

- a process chamber configured to receive a solution and process the frontside of the substrate, the process chamber having an electrode and contacts to supply power to the electrode and the frontside of the substrate; and

- a substrate carrier configured to hold the backside of the substrate, including:

- a base configured to receive the backside of the substrate;

- a permanent seal coupled to a first circumference of the base and configured to seal a first circumferential area;

- a ~~removable~~ seal coupled to a second circumference of the base and configured to seal a second circumferential area, wherein the seal is configured to be movable between a sealed position and an unsealed position while the substrate is mounted on the base; and

- a vacuum inlet disposed within the first circumferential area configured to receive vacuum for holding and sealing the backside of the substrate.

53. (Currently amended) The system for processing the substrate according to claim 52, wherein the process chamber is configured for ~~includes~~ electrochemical deposition of material to the frontside of the substrate.

54. (Canceled)

55. (Currently amended) ~~The system for processing the substrate according to claim 52~~ A system for processing a substrate having a frontside and a backside, the system comprising:

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a process chamber configured to receive a solution and process the frontside of the substrate, the process chamber having an electrode and contacts to supply power to the electrode and the frontside of the substrate; and

a substrate carrier configured to hold the backside of the substrate, including:

a base configured to receive the backside of the substrate;

a permanent seal coupled to a first circumference of the base and configured to seal a first circumferential area;

a removable seal coupled to a second circumference of the base and configured to seal a second circumferential area; and

a vacuum inlet disposed within the first circumferential area configured to receive vacuum for holding and sealing the backside of the substrate, wherein the process chamber is configured for includes electrochemical polishing polish of material from the frontside of the substrate.

56. (Currently amended) The system for processing the substrate according to claim 55 further comprising a pad configured to process between the frontside of the substrate, ~~and the processing chamber~~ wherein the process chamber is configured for includes electrochemical mechanical polishing polish of material from the frontside of the substrate using the pad.